

## REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Amendments to Claims

Claim 1 has been amended to include the limitations of original claim 3, and further to recite that the biochip comprises a bottom plate, intermediate plate, and top cover plate, and that the micro heater and micro temperature detector are both mounted on the same layer of the bottom plate inside the micro reaction tank. Support for the recitation of the bottom, intermediate, and top plates, and for the recitation that the micro heater and micro temperature detector are mounted on the same layer of the bottom plate, is found in Fig. 2, and in lines 11-17 and 30-34 on page 7 of the original specification.

It is noted that the original description of the “micro temperature detector 102 and electrodes 103 associated with apertures 21' mounted on both the intermediate plate 12 and the top cover plate 13” is somewhat confusing because it seems to suggest that the temperature detector 102 and electrodes 103 are on the intermediate and top plates. In fact, however, it is clear from original Fig. 2 that temperature detector 102 and electrodes 103 are on the *bottom* plate in the same layer as the micro heater 101, with only the associated apertures 21' being mounted on the intermediate and top plates.

In addition, page 8, lines 15-20 of the original specification explain that the micro heater 101 and micro temperature detector 102 of Fig. 2 are formed by an electric resistance layer 50, formed as shown in Fig. 4(a), in the same layer on the bottom plate 11 as recited in amended claim 1.

Therefore, the amendments to claim 1, and the corresponding amendments to page 7 of the original specification, do not constitute “new matter.”

2      Rejection of Claims 1-20 Under 35 USC §102(b) in view of U.S. Patent Publication No. 2004/0005582 (Shipwash)

This rejection is respectfully traversed on the grounds that the Shipwash publication fails to disclose or suggest an integrated analytical chip in which a heater and micro temperature detector for PCR analysis are mounted inside a reaction tank on a same layer of a baseplate of the tank.

According to the Examiner, the Shipwash publication “*teaches wherein said micro heater and said micro temperature detector are formed by an electrical resistance layer (e.g., paragraphs 0018 0312-0318).*” However, paragraphs 0018 0312-0318 of the Shipwash publication have been reviewed and do not mention formation of a micro heater and micro temperature detector by an electrical resistance layer, much less formation of the micro heater and micro temperature detector *inside* the reaction tank on a base of the tank, as claimed. Instead, paragraph [0018] of Shipwash merely mentions that the “*the embodiments include a temperature regulating means to provide for adjusting or controlling the temperature of the locus of the binding events*” and that “*In still further embodiments the apparatus of the invention includes a temperature regulatory system or unit to adjust and or control the temperature of the biospecific desorption event. . .*,” while paragraphs [0312]-[0318] contain citations support the statement that “*Microflow PCR methods rely heavily on temperature of a fluidic environment and such temperature control methods are readily adaptable to the present systems.*” Nowhere do the cited passages, or any other passages in the Shipwash publication, disclose or suggest formation of a micro heater and micro temperature detector on a inside the reaction tank, much less on a same layer, as claimed. The closest suggestion of a micro heater in the entire Shipwash publication is the mention in paragraph [0313] of “*thin film heaters,*” but there is not disclosure as to where the thin film heaters are formed, or of forming them on a same layer as a micro temperature detector.

Not only does the Shipwash publication fail to disclose the claimed micro heater and temperature detector formation on the base of the reaction tank, but according to the Applicant,

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none of the cited references discloses or suggest such formation. To the contrary, according to the Applicant, the reference cited in paragraph [0313] of the Shipwash publication discloses a heater and temperature detector on different sides of a substrate, with the heater being mounted on the side away from the fluid and the temperature detector on the side adjacent the fluid. In such an arrangement, separate formation of the heater and temperature detector is required, and the heating speed and sensitivity of the detector is lowered because it is on the opposite side from the heater. It is noted that copies of the references cited in the Shipwash publication are not available to the undersigned at this time, but should be available to the Examiner through PAIR.

Because the Shipwash publication fails to disclose or suggest the claimed arrangement of a micro heater and micro temperature detector on a same layer of a base of the reaction tank, it is respectfully submitted that the rejection of claims 1-20 in view of the Shipwash patent is improper and should be withdrawn.

Having thus overcome the sole rejection made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

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